

19. Discuss the structure, function, and agricultural benefits of cyanobacterial biofertilizers.
20. Discuss the factors that affect the efficacy of biofertilizers in agricultural fields.

NOVEMBER/DECEMBER 2024

**23PSMB35 — ORGANIC FARMING AND BIOFERTILIZER TECHNOLOGY (SEC II)**

Time : Three hours

Maximum : 75 marks

**SECTION A — (10 × 2 = 20 marks)**

Answer ALL questions.

1. Define organic farming.
2. What are biocontrol agents in pest management?
3. Define land degradation.
4. What is the National Project on Organic Farming (NPOF)?
5. Mention the advantage of using *Azotobacter* as a biofertilizer.
6. What is Frankia?
7. What is phosphate solubilization?
8. What are fungal biofertilizers?
9. What are carrier-based biofertilizers?
10. What are FCO specifications in biofertilizer production?



**SECTION B — (5 × 5 = 25 marks)**

Answer ALL questions.

11. (a) How does the use of biofertilizers contribute to biological nutrient management?

Or

(b) Compare organic and chemical farming practices in terms of environmental impact.

12. (a) Briefly describe the objectives of the HMNEH.

Or

(b) Explain the process of organic certification and its importance for organic farming.

13. (a) What are the advantages of using biofertilizers over chemical fertilizers?

Or

(b) Analyze the role of *Pseudomonas* in plant growth promotion and disease suppression.

14. (a) Compare AM mycorrhiza and ectomycorrhiza, discussing their roles in enhancing plant growth.

Or

(b) Describe the mechanism of free-living nitrogen fixation and provide examples of organisms involved.

15. (a) Explain the process of strain selection and its significance in the production of biofertilizers.

Or

(b) Describe the process of sterilization and its role in ensuring the quality of biofertilizers.

**SECTION C — (3 × 10 = 30 marks)**

Answer any THREE questions.

16. Explain the role of biological nutrient management in organic farming, emphasizing the use of organic manures, vermicompost, and biofertilizers.

17. Discuss the concept and goals of the Integrated Farming System (IFS). How do the components of IFS contribute to ecological balance and farm sustainability?

18. Discuss the various types of biofertilizers, highlighting the role of bacterial biofertilizers such as Azospirillum, Azotobacter, Bacillus, and *Pseudomonas* in sustainable agriculture.